

CLAIMS

1. (Currently Amended) An ion-assisted electron beam evaporation process, the process comprising the steps of:

- positioning multiple high yield fixtures in an array;
- adjusting a vertical position of each of the fixtures to compensate for variations in deposition rate versus chamber location;
- providing two electron guns;
- mounting the guns to a movable track;
- ~~positioning~~ moving the first gun ~~[[at]]~~ to a source deposition location;
- rotating the fixtures at greater than 2400 rpm;
- performing ion assisted evaporation with the first gun, the second gun being kept in a first stand-by location in pre-heat mode;
- ceasing deposition prior to achieving target thickness on each fixture by shuttering each of the fixtures;
- independently reopening the fixtures to resume deposition at a low rate pulsed deposition to achieve the target thickness;
- closing shutters on the fixtures;
- moving the first gun to a second stand-by ~~position~~ location;
- moving the second gun to the source deposition location;
- sampling evaporation with a quartz crystal thickness monitor;
- opening a shutter on the second gun;

performing ion assisted evaporation with the second gun, the first gun being kept in [[a]] the second stand-by location in pre-heat mode;

ceasing deposition prior to achieving target thickness shuttering each of the fixtures;

independently reopening the fixtures to resume deposition at a low rate pulsed deposition to achieve the target thickness;

closing shutters on the fixtures; and

repeating the process until desired filter is obtained.

2. (Currently Amended) A method for producing an optical filter utilizing line-of-sight deposition, the method comprising the steps of:

providing multiple substrates;

providing a fixed ion source;

providing at least one selectively movable evaporator, the evaporator providing energy for evaporation of material to be deposited and being ~~positionable at~~ moveable between a source deposition location and [[at]] a stand-by location spaced apart from the source deposition location;

~~positioning~~ moving the at least one evaporator [[at]] to the source deposition location; and,

depositing material onto the substrates.

3. (Original) The method of Claim 2, wherein the method further comprises the step of:

shuttering the substrates as necessary to ensure uniform deposition on the substrates.

4. **(Original)** The method of Claim 3, where in the method further comprises the step of:

rotating the substrates at approximately greater than 500 revolutions per minute.

5. **(Previously Presented)** The method of Claim 4, wherein shuttering the substrates as necessary to ensure uniform deposition on the substrates comprises the steps of:

ceasing deposition of a layer prior to achieving target thickness by shuttering the substrates;

independently unshuttering the substrates to resume deposition; and,

achieving the target thickness.

6. **(Currently Amended)** The method of Claim 2, wherein the at least one evaporator is at least two selectively movable evaporators, the method further comprising the steps of:

moving the first evaporator to the stand-by ~~position~~ location;

opening a shutter on the second evaporator;

~~positioning~~ moving the second evaporator ~~[[at]]~~ to the source deposition location;

and,

performing ion assisted evaporation with the second evaporator.

7. **(Previously Presented)** The method of Claim 6, wherein the method further comprises the steps of:

ceasing deposition of a layer prior to achieving target thickness by shuttering the substrates;

independently unshuttering the substrates to resume deposition; and,
achieving the target thickness.

8. (Original) The method of Claim 7, wherein after moving the second evaporator into the source deposition location, the method comprises the step of:
sampling evaporation with a quartz crystal thickness monitor.

9. (Original) The method of Claim 8, wherein the method further comprises the steps of:
closing clam shutters on the substrates; and,
repeating the process until desired filter is obtained.

10. (Original) The method of Claim 9, wherein providing multiple substrates comprises the step of:
providing a dense high yield fixture array having multiple, independently shutterable fixtures, each of the fixtures containing multiple substrates.

11-19. (Canceled)

20. (Original) The method of Claim 4, wherein rotating the substrates at greater than 500 revolutions per minute comprises the step of:
rotating the substrates at greater than 2400 revolutions per minute.

21-22. (Canceled)

23. (Currently Amended) A method of making an optical filter by ion assisted deposition comprising the steps of:

mounting one or more substrates in a deposition chamber;

mounting an ion source within the chamber;

~~positioning~~ moving a first evaporator ~~[[at]]~~ to a source deposition ~~position~~ location
~~located~~ within the chamber proximate the ion source, the first evaporator being adapted to
provide energy for evaporation of a first material to be deposited;

~~positioning~~ moving a second evaporator ~~[[at]]~~ to a stand-by ~~position~~ location
~~located~~ within the chamber remote from the ion source, the second evaporator being
adapted to provide energy for evaporation of a second material to be deposited;

depositing a first material from the first evaporator on the one or more substrates;

ceasing deposition of the first material;

~~positioning~~ moving the first evaporator ~~[[at]]~~ to a stand-by ~~position~~ location within
the chamber remote from the ion source;

~~positioning~~ moving the second evaporator ~~[[at]]~~ to the source deposition ~~position~~
location;

depositing a second material from the second evaporator on the one or more
substrates; and

ceasing deposition of the second material.

24. (Currently Amended) A method of making an optical filter by ion
assisted deposition comprising the steps of:

exposing one or more substrates to a first evaporator adapted to provide energy to
evaporate a first material to be deposited positioned at a source deposition location;

shielding the one or more substrates from a second evaporator positioned at a stand-by location laterally spaced from the source deposition location;

depositing a layer of a first material on the one or more substrates;

exposing the one or more substrates to the second evaporator adapted to provide energy to evaporate a second material to be deposited positioned at the source deposition location;

shielding the one or more substrates from the first evaporator positioned at the stand-by location; and

depositing a layer of second material on the one or more substrates.

25. (Currently Amended) A method comprising the steps of:

providing a deposition chamber;

positioning a generally planar substrate carrier proximate one end of the chamber, the substrate carrier being adapted to carry an array of substrates;

positioning a generally planar electron gun carrier proximate the other end of the chamber, the electron gun carrier being substantially parallel to the substrate carrier;

providing a source deposition location on the electron gun carrier;

providing a stand-by location on the electron gun carrier, the stand-by location being spaced laterally from the source deposition location;

positioning an electron gun on the electron gun carrier, the electron gun being adapted to provide energy for evaporation of material to be deposited on the substrates and being ~~positionable at~~ moveable between the source deposition location and the stand-by location; and

positioning an ion source proximate the source deposition location.

26. (Previously Presented) The method of Claim 25 wherein the ion source is mounted on the electron gun carrier.

27. (Currently Amended) The method of Claim 25 further comprising the step of positioning a second electron gun on the electron gun carrier, the second electron gun being adapted to provide energy for evaporation of a second material to be deposited on the substrates and being ~~positionable at~~ moveable between the source deposition location and the stand-by location.

28. (Previously Presented) The method of Claim 1 wherein the stand-by location is laterally spaced from the ion source a distance greater than the distance the source deposition location is spaced from the ion source.